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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/866,861	05/29/2001	Satoshi Inoue	9319T-000219	4497

27572 7590 03/30/2004
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EXAMINER

LIANG, REGINA

ART UNIT	PAPER NUMBER
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2674

19

DATE MAILED: 03/30/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/866,861

Applicant(s)

INOUE, SATOSHI

Examiner

Regina Liang

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 February 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8, 23-27, 30-39 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8, 23-27, 30-39 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claim Rejections - 35 USC § 103

2. Claims 1, 2, 23, 25, 27, 30, 31, 33, 34, 36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gates et al (US. PAT. NO. 6,531,997 hereinafter Gates).

As to claims 1, 23, 30, 33, 36, Figs. 1A-1D, 3A-3F of Gates discloses a display device having display states which are prescribed by distribution states of particles (50), the display device comprising a driving circuit applying a first electric field of a first polarity to the particles for changing the distribution state thereof into a certain state (e.g., Figs. 1A and 3B). Gates does not explicitly disclose applying a second electric field of the first polarity to the particles for maintaining or stabilizing the certain state. However, Gates teaches in order to change the state of the display, one must apply an opposite polarity of the first electric field to the particles (see Figs. 1C and 3C), from this it would have been obvious to one of ordinary skill in the art at the time the invention was made to realize that when the driving circuit of Gates is used to apply a same electric field (second electric field) of the first polarity to the particles would maintain or stabilize the certain state such that the picture quality of the display pattern can be retained since the certain state is changed only by applying an opposite polarity of the first electric field to the particles.

As to claims 2, 25, 31, 34, Gates teaches the particles (50) are contained in a microcapsule (20) together with a liquid (25) for dispersing the particles.

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As to claim 27, Gates teaches the particles are formed of a plurality of charged particles with differing quantities of electric charge (Fig. 1A, black and positive particles 50, white and negative particles 50').

Claim Rejections - 35 USC § 103

3. Claims 3-8, 24, 32, 35, 37, 38, 39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gates in view of Turner et al (US. PAT. NO. 6,480,182 hereinafter Turner).

As to claims 3, 4, 32, 35, 39, Gates does not disclose the display device comprising a plurality of scanning electrodes and data electrodes for independently applying the electric field to the particles in pixel units. However, Fig. 1 of Turner teaches the display device comprising a plurality of scanning electrodes and data electrodes for independently applying the electric field to the particles in pixel units. Thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the display device of Gates to have the plurality of scanning electrodes and data electrodes for independently applying the electric field to the particles in pixel units as taught by Turner since the scanning electrodes and the data electrodes arranged in an intersecting pattern to allow specific elements or regions of the display material to be addressed.

As to claim 5, Turner teaches a switching element is disposed in correspondence to the intersection of the plurality of scanning lines and the data lines.

As to claims 6-8, Turner teaches the switching element comprises a thin film transistor or a two-terminal nonlinear element (col. 1, lines 43-62).

As to claim 24, see col. 4, line 65 to col. 5, line 31 of Turner.

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As to claim 37, the delay time as shown in Fig. 3F reads on a certain period of time passes as claimed.

As to claim 38, Gates teaches the particles (50) are contained in a microcapsule (20) together with a liquid (25) for dispersing the particles.

4. Claim 26 is rejected under 35 U.S.C. 103(a) as being unpatentable over Gates and Turner as applied to claim 24 above, and further in view of Okamoto (US. PAT. NO. 6,094,184).

Gates as modified by Turner does not disclose a pixel is structured of a plurality of sub pixels, and gradation is controlled by pulse-surface-area modulation. However, Okamoto teaches it is well known in the art that a matrix display comprising a plurality of pixels each pixel can be structured of a plurality of sub-pixels, and the gradation is controlled by pulse-width modulation (col. 3, lines 1-5, col. 4, lines 32-33). Thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the display of Turner to have the sub-pixels and the gradation as taught by Okamoto so as to provide a driving control for a matrix display which are capable of stable display of intermediate shades.

Response to Arguments


5. Applicant's arguments with respect to claims 1-8, 23-27, 30-39 have been considered but are moot in view of the new ground(s) of rejection.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Regina Liang whose telephone number is (703) 305-4719. The examiner can normally be reached on Monday-Friday from 9AM to 5:00PM.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Hjerpe, can be reached on (703) 305-4709. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3900.


REGINA LIANG
PRIMARY EXAMINER
ART UNIT 2674

RL
3/19/04